IN THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A method for manufacturing a functional layer, comprising: ~~wherein~~ introducing a substrate ~~(1; 101) is introduced~~ into a process chamber; ~~(2; 102), wherein at least one~~ generating a plasma ~~(P) is generated~~ by ~~at least one~~ a DC plasma cascade source; ~~(3; 103), such as for instance a plasma cascade source, wherein at least one~~ depositing a first deposition material ~~(A) is deposited~~ on the substrate ~~(1; 101)~~ under the influence of the plasma ~~(P)~~, wherein, at the same time, ~~at least one~~ applying a second deposition material ~~(B) is applied~~ to the substrate with ~~the aid of~~ a second deposition process, wherein the functional layer has no catalytic function.

2. (Currently amended) A method according to claim 1, wherein the ~~said~~ first deposition material ~~(A)~~ is supplied to the plasma ~~(P)~~ outside the ~~at least one~~ plasma source ~~(3; 103)~~ in the process chamber ~~(2; 102)~~.

3. (Currently amended) A method according to claim 1 ~~or 2~~, wherein ~~at least one~~ a volatile compound of the ~~said~~ first deposition material ~~(A)~~ is supplied to the plasma ~~(P)~~ for the ~~purpose of the~~ deposition.

4. (Currently amended) A method according to claim 3, wherein the volatile compound contains ~~at least one~~ a precursor material which decomposes the first deposition material ~~to be deposited~~ in the process chamber ~~(2; 102)~~ before the first deposition material has reached the substrate ~~(1;101)~~.

5. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the second deposition process ~~has been chosen from the group comprising~~ is PECVD, CVD, PVD, ~~such as~~ sputtering, hollow-cathode sputtering, vapor deposition ~~optionally~~ using boats, e-beam, and/or ~~optionally~~ supported by an ion process, ion plating, microwave deposition, ICP (inductive coupled plasma), parallel-plate PECVD, ~~optionally~~ and/or honey comb electrode structures~~, and the like~~.

6. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein ~~at least one~~ a sputtering electrode ~~(6)~~ comprising the ~~said~~ first and/or the second deposition material ~~(A, B)~~ is arranged in the process chamber ~~(2)~~, wherein the plasma ~~(P)~~ is brought into contact with said sputtering electrode ~~(6)~~ to sputter the substrate ~~(1)~~ with the first and/or the second deposition material ~~(A, B)~~ of the electrode ~~(6)~~.

7. (Currently amended) A method according to claim 6, wherein the plasma ~~(P)~~ is passed at least partly through ~~at least one~~ a passage of the ~~at least one~~ sputtering electrode ~~(6)~~ to contact the plasma with the electrode ~~(6)~~.

8. (Currently amended) A method according to claim 7, wherein the sputtering electrode ~~(6)~~ contains compressed powders of the ~~said~~ first and/or second deposition materials ~~(A, B)~~ to be deposited on the substrate ~~(1)~~.

9. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(101)~~ comprises sheet material.

10. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(101)~~ is moved in the process chamber ~~(102)~~ at least in such a manner that each time a different part of the substrate ~~(101)~~ contacts the plasma ~~(P)~~.

11. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(101)~~ is brought from an environment into the process chamber ~~(102)~~ and is discharged from the process chamber ~~(102)~~ to the environment while the deposition material is deposited on the substrate ~~(101)~~ in the process chamber ~~(102)~~.

12. (Currently amended) A method according to ~~at least~~ claim 1, wherein the substrate ~~(1; 101)~~ is substantially non-porous and ~~is, for instance,~~ comprises a metal or plastic~~, such as for instance a metal plate, a plastic sheet or a plastic film~~.

13. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(1; 101)~~ comprises ~~at least one~~ a carrier material ~~(B)~~.

14. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(1; 101)~~ comprises ~~at least one~~ a metal and/or an alloy.

15. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(1; 101)~~ comprises corrugated material.

16. (Currently amended) A method according to ~~at least~~ claim 1, wherein the substrate ~~(1; 101)~~ is substantially porous.

17. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the first and/or second deposition material ~~(A, B)~~ is deposited such that the chemical composition of the deposited material measured over distances of 5 cm~~, preferably over a distance of 10 cm, more particularly over a distance of 20 cm,~~ differs by less than 10%~~, particularly less than 5% and more particularly less than 1%~~.

18. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(1; 101)~~ is adjusted to a particular electrical potential~~, for instance~~ by DC, pulsed DC and/or RF biasing.

19. (Currently amended) A method according to ~~any one of the preceding claims~~ claim 1, wherein the substrate ~~(1; 101)~~ is adjusted to a ~~particular~~ treatment temperature.

20. (Currently amended) An apparatus for manufacturing a functional layer on a substrate, ~~wherein the apparatus is provided with at least one~~ comprising:

a process chamber;

a DC plasma cascade source ~~(3; 103), such as for instance a plasma cascade source,~~ configured to generate ~~at least one~~ a plasma;

~~(P), wherein the apparatus comprises means (6, 7) for introducing~~ a first deposition material source configured to introduce a first deposition material ~~(A)~~ into ~~each~~ the plasma;

~~(P), wherein the apparatus is further provided with~~ a substrate positioning ~~means (8; 118) for bringing and/or keeping~~ device configured to bring and/or keep at least a part of a substrate ~~(1; 101)~~ in such a position in ~~a~~ the process chamber ~~(2; 102)~~ that the substrate ~~(1; 101)~~ contacts said plasma;

~~(P), wherein the apparatus is provided with~~ a second deposition material source~~,~~ ~~which second deposition source is arranged~~ configured to deposit ~~at least one~~ a second deposition material ~~(B)~~ on the substrate ~~(1; 101)~~ at the same time as the plasma source, wherein the functional layer is no catalytically active layer.

21. (Currently amended) An apparatus according to claim 20, wherein the second deposition material source is a VD source, ~~such as for instance~~ including a CVD source, a PVD source, or a PECVD source.

22. (Currently amended) An apparatus according to claim 20 ~~or 21~~, wherein the second deposition material source is ~~arranged for carrying out one of the following~~ is configured to carry out deposition processes including: PECVD, CVD, PVD, ~~such as~~ sputtering, hollow-cathode sputtering, vapor deposition ~~optionally~~ using boats, e-beam, and/or ~~optionally~~ supported by an ion process, ion plating, microwave deposition, ICP (inductive coupled plasma), parallel-plate PECVD, and/or ~~optionally~~ honeycomb electrode structures~~, and the like~~.

23. (Currently amended) An apparatus according to claim 21, wherein the second deposition material source comprises ~~at least one~~ a sputtering electrode ~~(6)~~ containing the first and/or the second deposition material ~~(A, B)~~ to be deposited, wherein the sputtering electrode is positioned such that, during use, the plasma ~~(P)~~ generated by the ~~at least one~~ plasma source ~~(3)~~ sputters the first and/or the second deposition material ~~(A, B)~~ from the sputtering electrode ~~(6)~~ onto the substrate ~~(1)~~.

24. (Currently amended) An apparatus according to claim 23, wherein ~~each~~ the sputtering electrode ~~(6)~~ is arranged downstream of the ~~at least one~~ plasma source ~~(3), while at least one sputtering electrode (6)~~ and is provided with ~~at least one~~ a plasma passage to allow the plasma ~~(P)~~ to pass from the source ~~(3)~~ to the substrate ~~(1)~~.

25. (Currently amended) An apparatus according to claim 23 ~~or 24~~, wherein the sputtering electrode ~~(6)~~ abuts the plasma source ~~(3)~~.

26. (Currently amended) An apparatus according to ~~any one of claims 20-25~~ claim 20, ~~wherein the apparatus is provided with at least one~~ further comprising a fluid supply channel ~~(7; 120)~~ configured to supply ~~a~~ the first deposition material to be deposited, being in a volatile state, to the plasma ~~(P)~~.

27. (Currently amended) An apparatus according to ~~at least claims 23 and 26~~ claim 26, wherein the ~~at least one~~ sputtering electrode ~~(6)~~ is provided with the ~~said~~ fluid supply channel.

28. (Currently amended) An apparatus according to ~~at least~~ claim 20, ~~wherein the apparatus is provided with at least~~ further comprising two DC plasma cascade sources ~~(103, 103')~~ configured to generate ~~at least~~ two plasmas ~~(P, P')~~, wherein ~~these~~ the two DC plasma cascade sources ~~(103, 103')~~ and the substrate positioning ~~means (118, 118')~~ device are positioned such that, during use, opposite sides of the substrate ~~(1; 101)~~ contact the plasmas ~~(P, P')~~ generated by ~~those~~ the two DC plasma cascade sources ~~(103, 103')~~ to deposit material on the opposite sides of the substrate ~~(101)~~.

29. (Currently amended) An apparatus according to ~~at least~~ claim 20, ~~wherein the apparatus is provided with~~ further comprising a substrate supply roller ~~(110)~~ and discharge roller ~~(111)~~, respectively, ~~for~~ configured to supply and discharge, respectively, ~~of~~ a substrate ~~(101)~~ that can be rolled up~~, such as a web and/or sheet-like substrate,~~ to and from the process chamber ~~(102)~~, respectively.

30. (Currently amended) An apparatus according to ~~at least~~ claim 20, wherein a wall ~~(104)~~ of the process chamber ~~(102)~~ is provided with ~~at least one~~ a passage ~~(105)~~ to pass the substrate ~~(101)~~ into and/or out of ~~that~~ the process chamber ~~(102)~~.

31. (Currently amended) An apparatus according to claim 30, wherein at least a part of the ~~at least one~~ passage ~~(105)~~ of the process chamber wall ~~(104)~~ is bounded by oppositely arranged feed-through rollers ~~(106), which feed-through rollers (106) are arranged~~ configured to engage a part of the substrate ~~(101)~~ disposed between them during use, for ~~the purpose of the~~ feed-through of the substrate ~~(101)~~.

32. (Currently amended) An apparatus according to ~~at least~~ claim ~~31~~ 29, ~~wherein the apparatus is provided with~~ further comprising a deformation means ~~(112)~~ member configured to deform the substrate ~~(101)~~ which has unrolled from the supply roller ~~(110)~~.

33. (Currently amended) An apparatus according to claim 32, wherein the deformation ~~means (112) are arranged~~ member is configured to corrugate and/or serrate the substrate ~~(101)~~.

34. (Currently amended) An apparatus according to ~~at least~~ claim 20, wherein the ~~apparatus is provided with means for vapor depositing~~ first and/or second deposition material is vapor deposited on the substrate ~~(1; 101)~~.

35. (Currently amended) An apparatus according to ~~at least~~ claim 20, ~~wherein the apparatus is provided with at least one~~ further comprising a separate sputtering source ~~(121) for sputtering~~ configured to sputter material onto the substrate ~~(101)~~.